

THE ENVISION™ RATING SYSTEM



Mississippi River Forum
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Minneapolis, Minnesota

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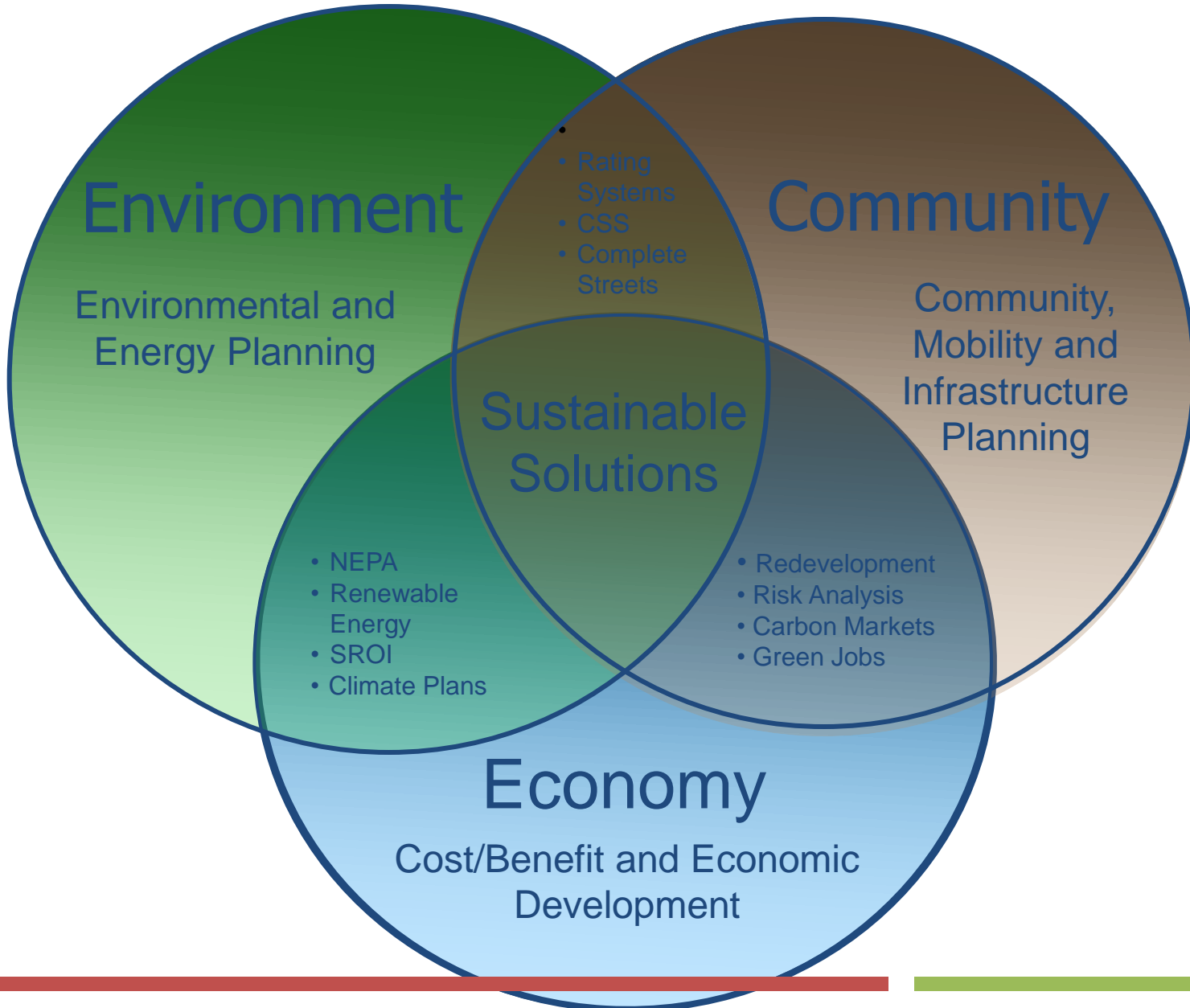
WHAT DO WE MEAN BY “SUSTAINABLE”?

“...to meet the needs
of the present without
compromising the
ability of future
generations to meet
their own needs.”

- World Commission on
Environment and Development,
1987



The Sustainability Challenge



THE ENVISION™ RATING SYSTEM



WHAT MAKES ENVISION™ UNIQUE?

- It applies to civil infrastructure
- It includes design, planning, construction and maintenance elements
- It is applicable at any point in an infrastructure project's life cycle
- It speaks to the triple bottom line: social, economic and environmental goals
- It is designed to keep pace with a changing concept of sustainability

WHAT IS ENVISION™?

Envision™ is a tool, which itself is part of a larger system, developed to help evaluate the sustainability of civil infrastructure.

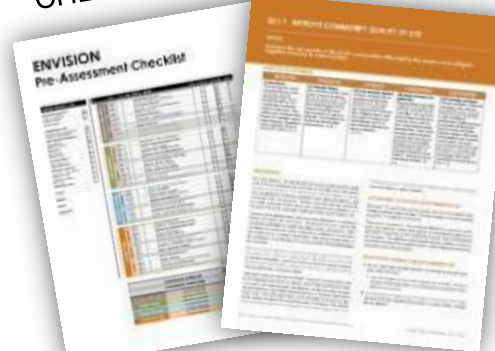
This system includes:

- A self assessment checklist
- The Envision™ Rating Tool
- A credential program for individuals
- A Project Evaluation and Verification Program
- A Recognition Program for Sustainable Infrastructure

PHASE TOOLKITS



PRE-ASSESSMENT
CHECKLIST



COMPANION TOOLS



What Types of Infrastructure will Envision Rate?



ENERGY

Geothermal
Hydroelectric
Nuclear
Coal
Natural Gas
Oil/Refinery
Wind
Solar
Biomass



WATER

Potable Water
Wastewater
Capture/Storage
Water Reuse
Storm Water/Wet
Weather
Pipelines
Flood Control
Water Supply



WASTE

Solid waste
Recycling
Hazardous
Waste
Collection &
Transfer



TRANSPORT

Airports
Roads
Highways
Bikes
Pedestrians
Railways
Public Transit
Ports
Waterways



LANDSCAPE

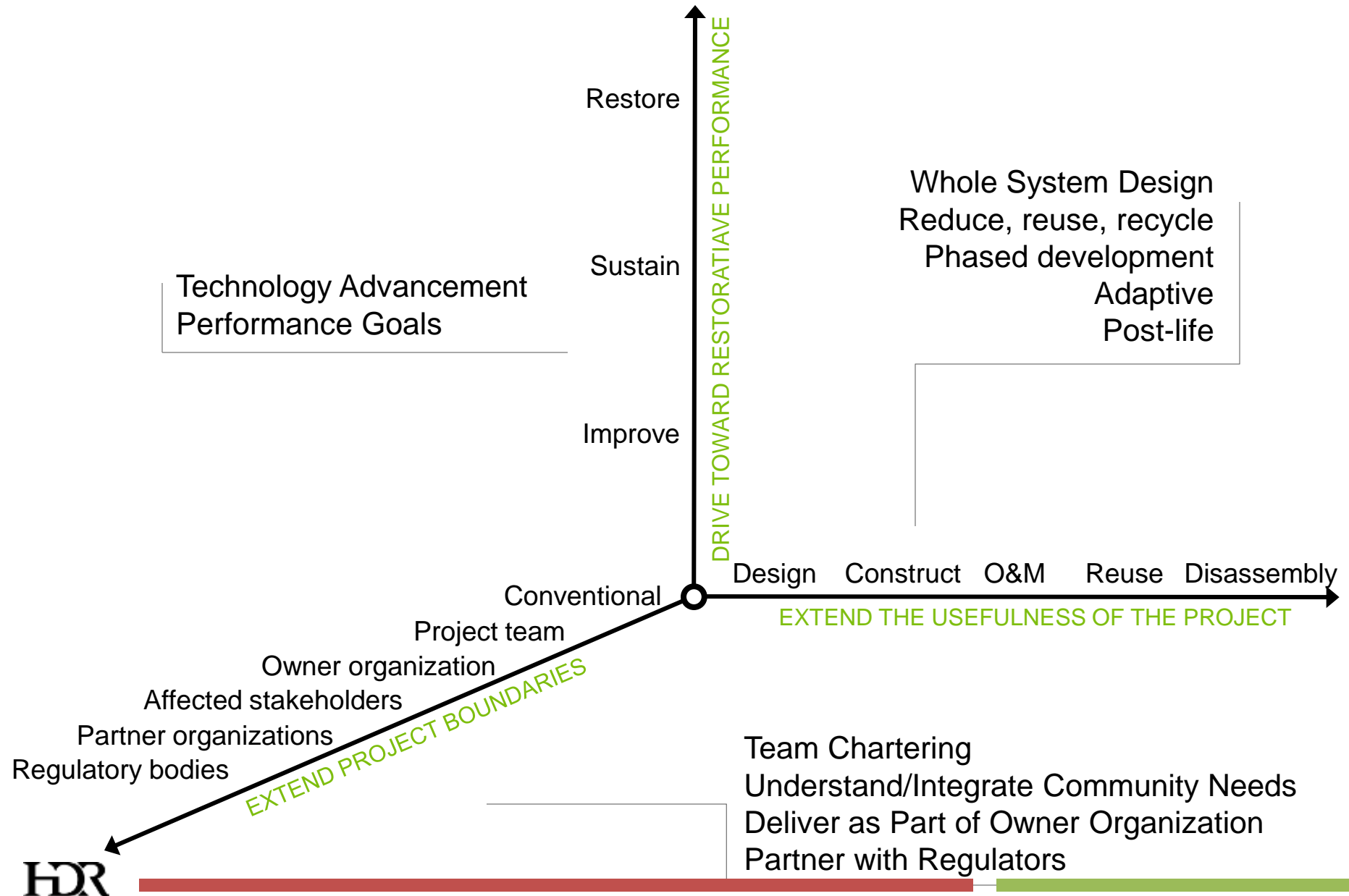
Public Realm
Parks
Ecosystem
Services



INFORMATION

Telecommunications
Internet
Phones
Satellites
Data Centers
Sensors

HOW WILL ENVISION™ IMPROVE SUSTAINABILITY?



Why use Envision?

- Third-party Verification and Recognition of Sustainability
- Robust evaluation ensuring environmentally responsible projects. (avoid greenwashing)
- Helps owners recognize and implement long-term, triple-bottom-line approaches

METRICS MATTER

- Envision™ measures outcomes, not intentions
- Five areas of achievement; 60 credits
- The business case for sustainability...why it is important

Adjusting Credit Requirements Based on Project Phase

[illegible]

FIVE LEVELS OF ACHIEVEMENT

IMPROVED

Performance that is at or above conventional

ENHANCED

Indications that superior performance is within reach.

SUPERIOR

Sustainable performance that is noteworthy.

CONSERVING

Performance that has achieved essentially zero impact.

RESTORATIVE

Performance that restores natural or social systems.

60 Credits in 5 Categories



**QUALITY
OF LIFE**

Purpose, Community, Wellbeing



LEADERSHIP

Collaboration, Management, Planning



**RESOURCE
ALLOCATION**

Materials, Energy, Water



**NATURAL
WORLD**

Siting, Land & Water, Biodiversity



**CLIMATE
AND RISK**

Emission, Resilience



QUALITY OF LIFE

DOES THE PROJECT PRESERVE AND ENHANCE LOCAL RESOURCES?

DOES THE PROJECT HELP THE SURROUNDING COMMUNITY GROW AND DEVELOP?

DOES THE PROJECT MAKE A MINIMAL NEGATIVE IMPACT ON THE SURROUNDING COMMUNITY?

ARE THERE HEALTH RISKS FOR EMPLOYEES OR NEARBY RESIDENTS?

IS THE PROJECT LOCATED NEAR PUBLIC TRANSPORTATION?

ARE LOCAL RESIDENTS EMPLOYED?



QUALITY OF LIFE

1 PURPOSE

QL1.1 Improve Community Quality of Life

QL1.2 Stimulate Sustainable Growth and Development

QL1.3 Develop Local Skills and Capabilities

2 WELLBEING

QL2.1 Enhance Public Health and Safety

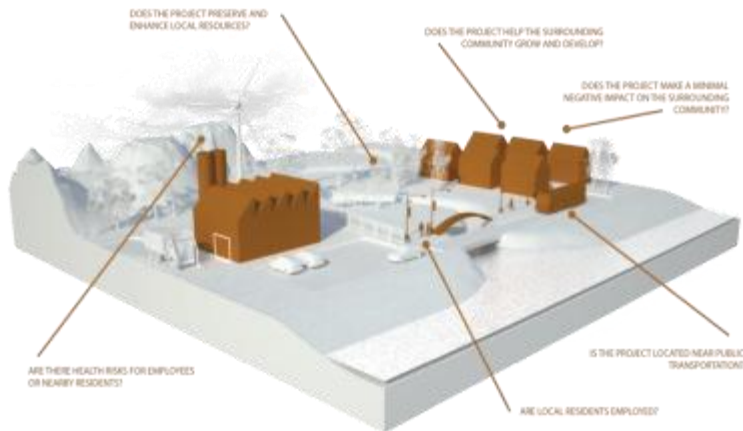
QL2.2 Minimize Noise and Vibration

QL2.3 Minimize Light Pollution

QL2.4 Improve Community Mobility and Access

QL2.5 Encourage Alternative Modes of Transportation

QL2.6 Improve Accessibility, Safety & Wayfinding



3 COMMUNITY

QL3.1 Preserve Historic and Cultural Resources

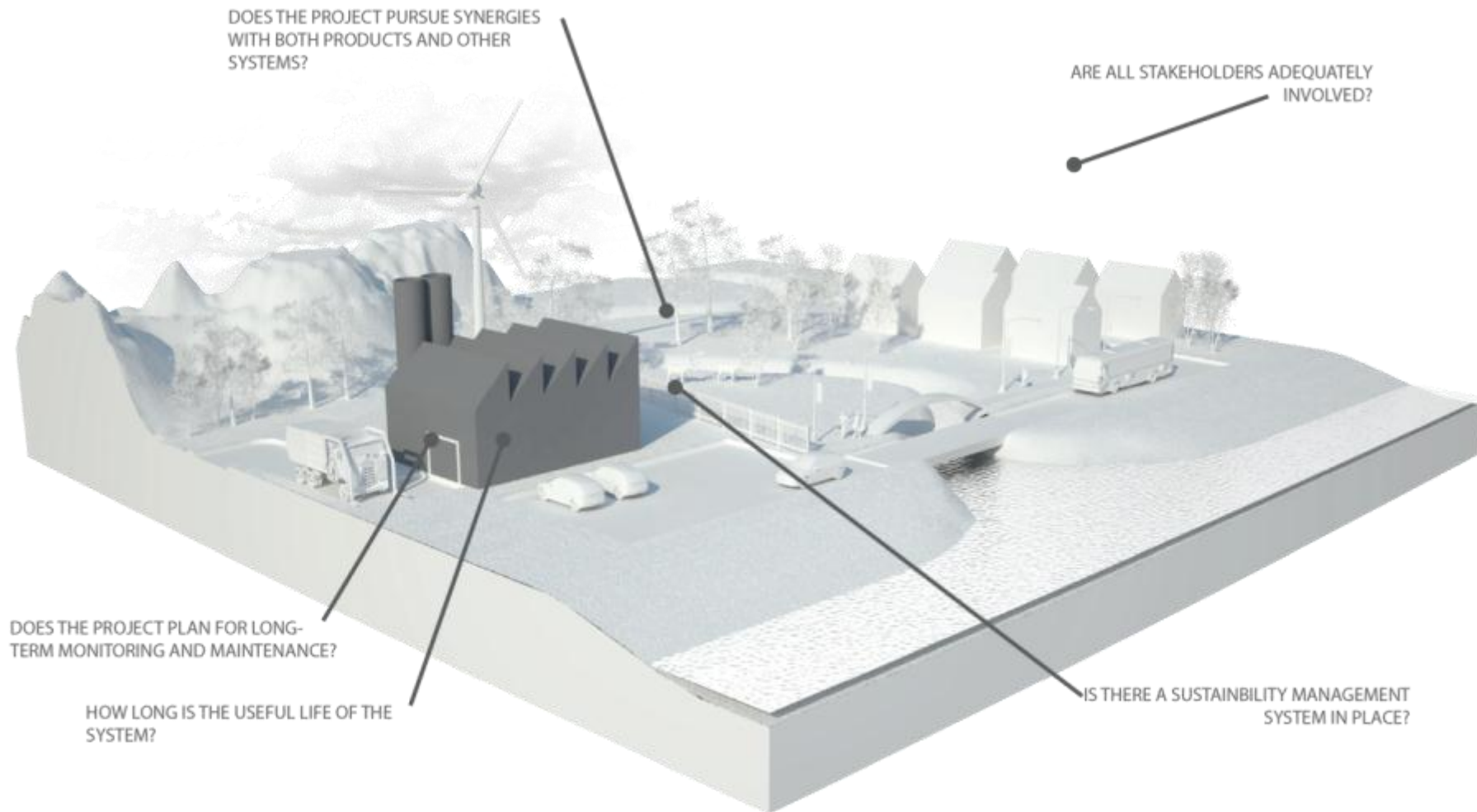
QL3.2 Preserve Views and Local Character

QL3.3 Enhance Public Space

QL0.0 Innovate or Exceed Credit Requirements



LEADERSHIP





LEADERSHIP

1 COLLABORATION

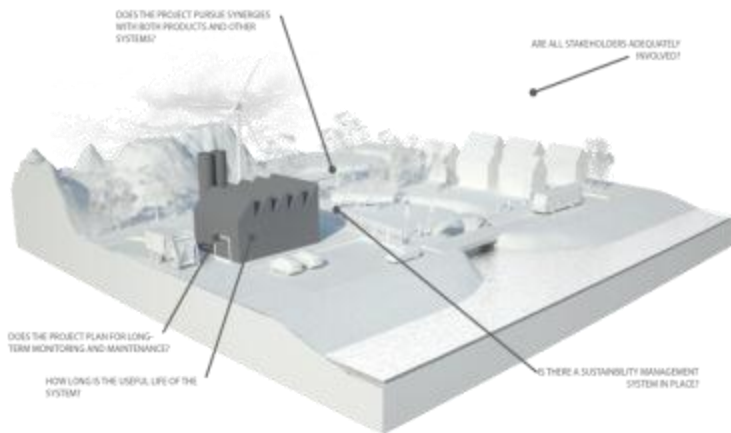
- LD1.1 Provide Effective Leadership & Commitment
- LD1.2 Establish a Sustainability Management System
- LD1.3 Foster Collaboration and Teamwork
- LD1.4 Provide for Stakeholder Involvement

2 MANAGEMENT

- LD2.1 Pursue By-Product Synergy Opportunities
- LD2.2 Improve Infrastructure Integration

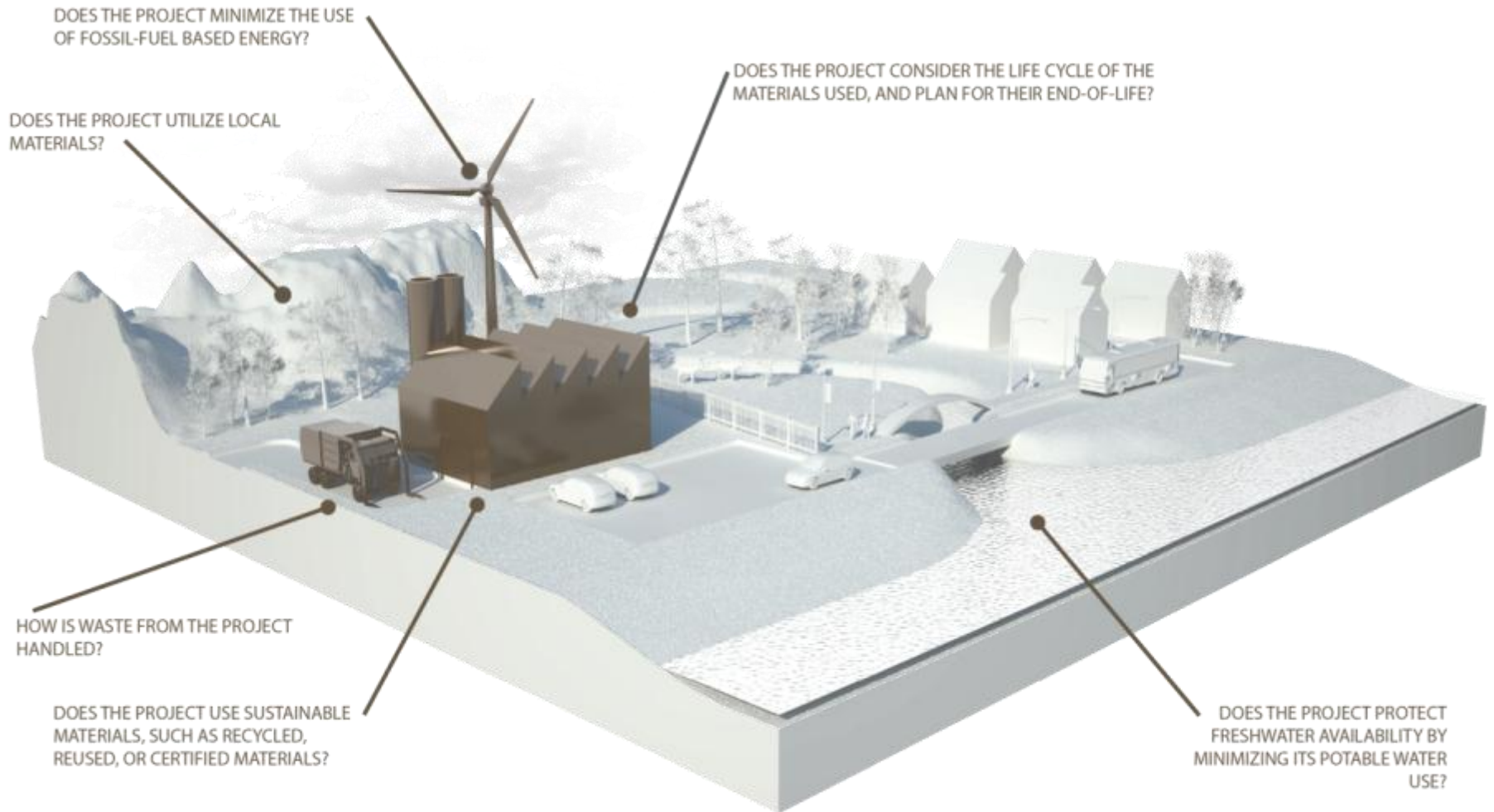
3 PLANNING

- LD3.1 Plan Long-Term Maintenance and Monitoring
- LD3.2 Address Conflicting Regulations and Policies
- LD3.3 Extend Useful Life
- LD0.0 Innovate or Exceed Credit Requirements





RESOURCE ALLOCATION



DOES THE PROJECT MINIMIZE THE USE
OF FOSSIL-FUEL BASED ENERGY?

DOES THE PROJECT UTILIZE LOCAL
MATERIALS?

DOES THE PROJECT CONSIDER THE LIFE CYCLE OF THE
MATERIALS USED, AND PLAN FOR THEIR END-OF-LIFE?

HOW IS WASTE FROM THE PROJECT
HANDLED?

DOES THE PROJECT USE SUSTAINABLE
MATERIALS, SUCH AS RECYCLED,
REUSED, OR CERTIFIED MATERIALS?

DOES THE PROJECT PROTECT
FRESHWATER AVAILABILITY BY
MINIMIZING ITS POTABLE WATER
USE?



RESOURCE ALLOCATION

1 MATERIALS

RA1.1 Reduce Net Embodied Energy

RA1.2 Support Sustainable Procurement Practices

RA1.3 Use Recycled Materials

RA1.4 Use Regional Materials

RA1.5 Divert Waste from Landfills

RA1.6 Reduce Excavated Materials Taken Off Site

RA1.7 Provide for Deconstruction and Recycling

2 ENERGY

RA2.1 Reduce Energy Consumption

RA2.2 Use Renewable Energy

RA2.3 Commission and Monitor Energy Systems

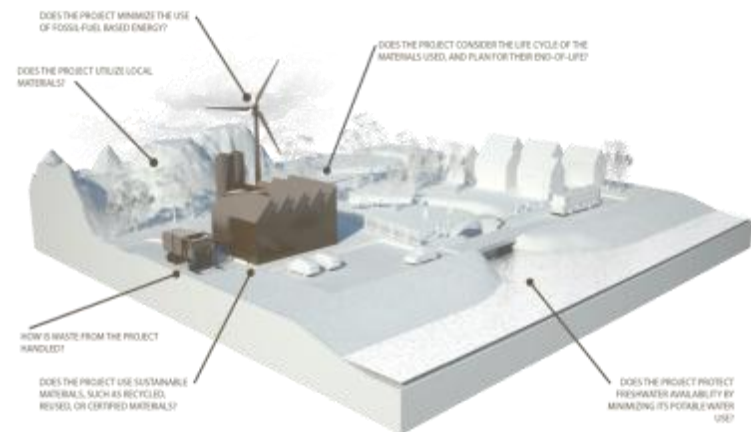
3 WATER

RA3.1 Protect Fresh Water Availability

RA3.2 Reduce Potable Water Consumption

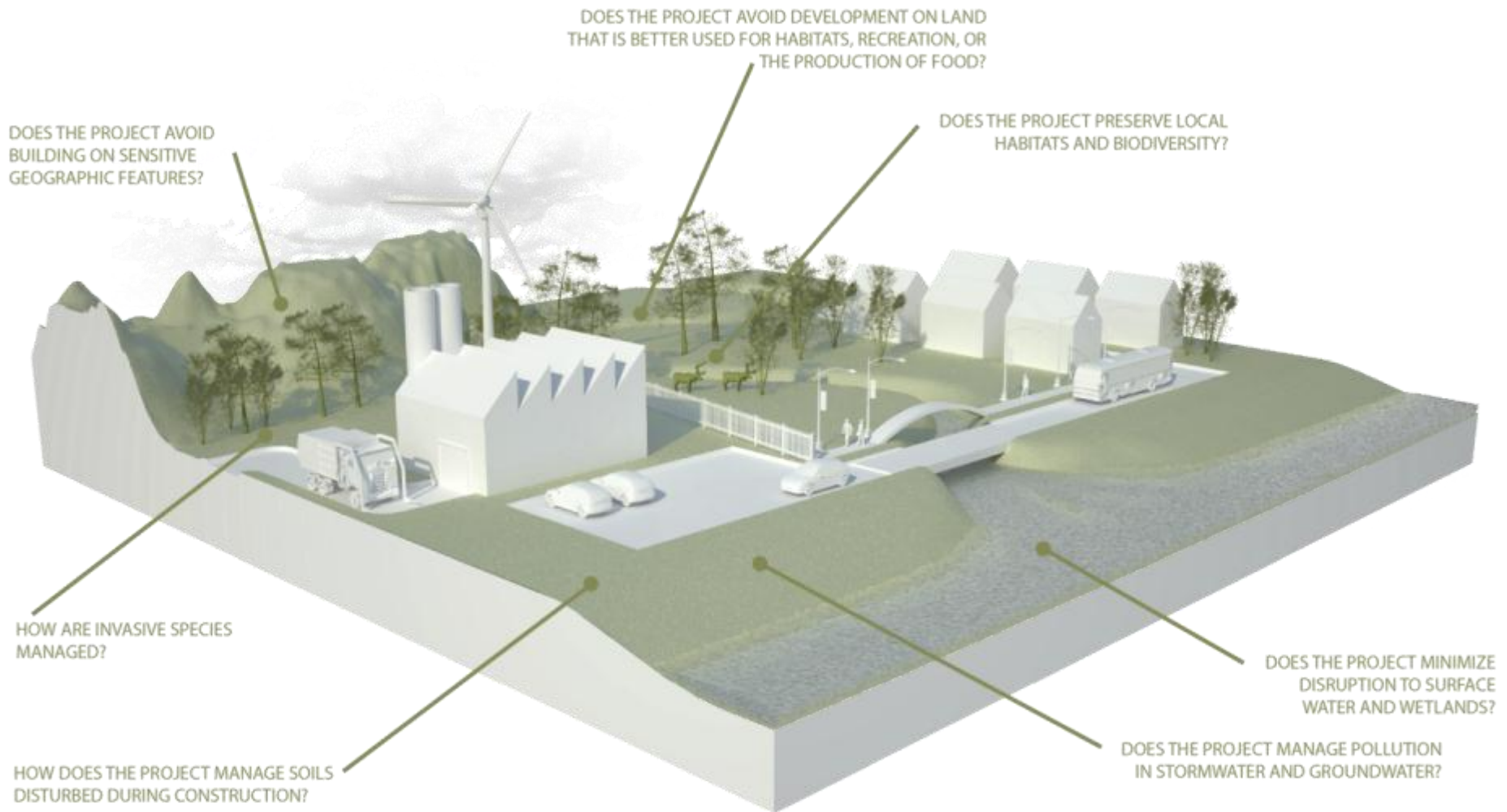
RA3.3 Monitor Water Systems

RA0.0 Innovate or Exceed Credit Requirements





NATURAL WORLD





NATURAL WORLD

1 SITING

NW1.1 Preserve Prime Habitat

NW1.2 Preserve Wetlands and Surface Water

NW1.3 Preserve Prime Farmland

NW1.4 Avoid Adverse Geology

NW1.5 Preserve Floodplain Functions

NW1.6 Avoid Unsuitable Development on Steep Slopes

NW1.7 Preserve Greenfields

2 LAND+WATER

NW2.1 Manage Stormwater

NW2.2 Reduce Pesticides and Fertilizer Impacts

NW2.3 Prevent Surface and Groundwater Contamination

3 BIODIVERSITY

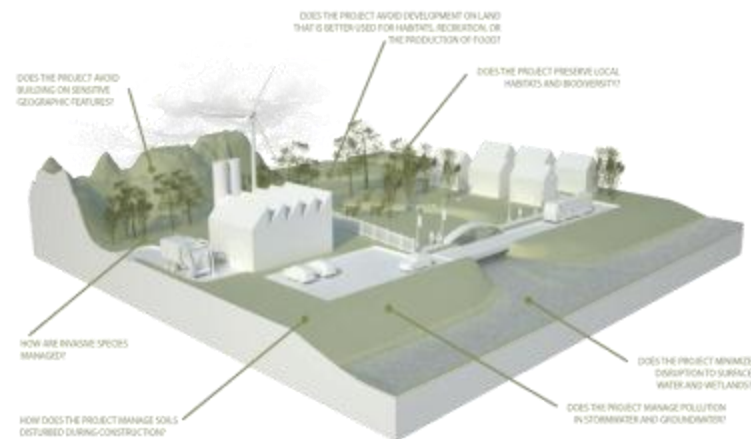
NW3.1 Preserve Species Biodiversity

NW3.2 Control Invasive Species

NW3.3 Restore Disturbed Soils

NW3.4 Maintain Wetland and Surface Water Functions

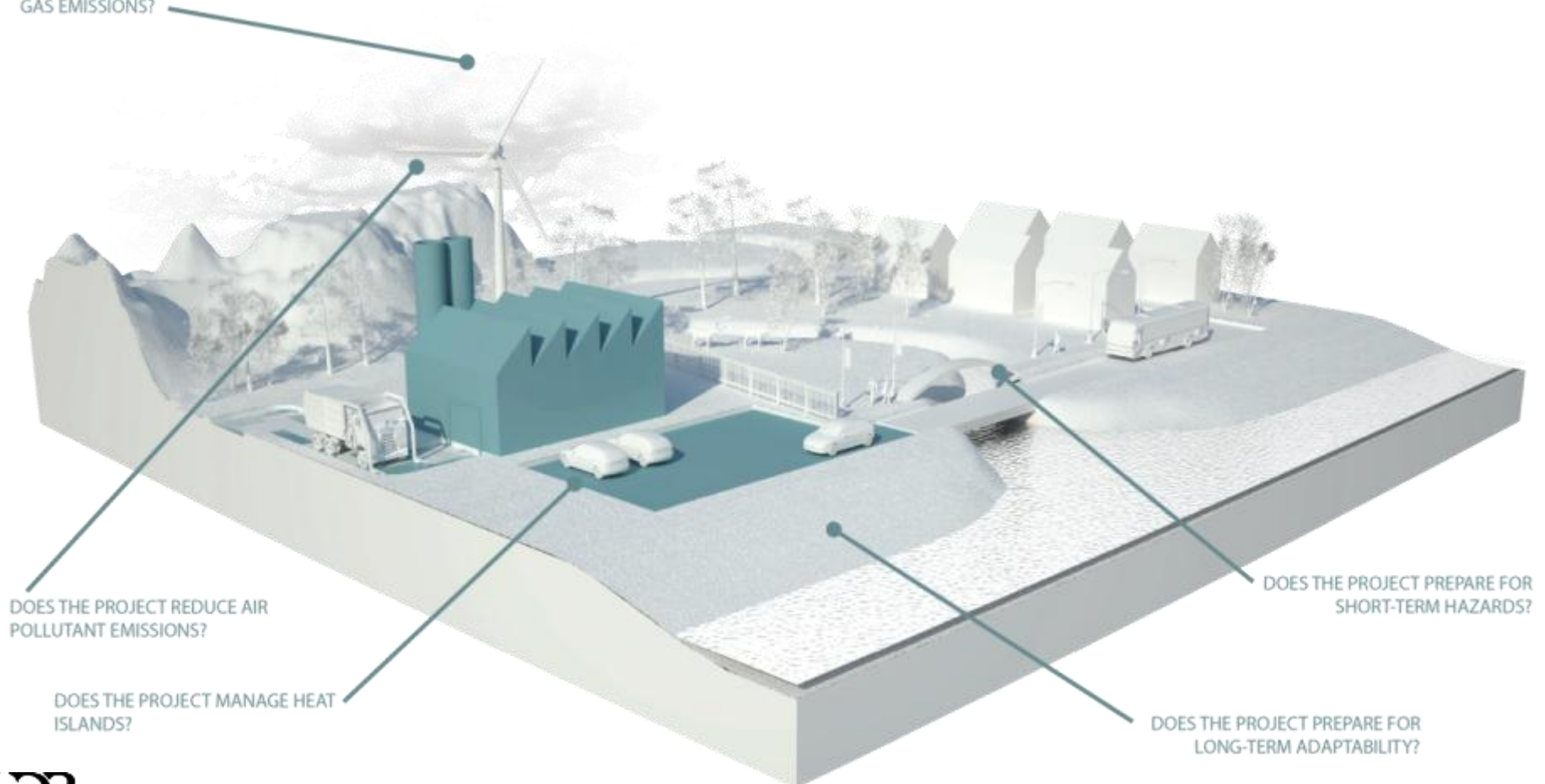
NW0.0 Innovate or Exceed Credit Requirements





CLIMATE AND RISK

DOES THE PROJECT MINIMIZE GREENHOUSE
GAS EMISSIONS?



DOES THE PROJECT REDUCE AIR
POLLUTANT EMISSIONS?

DOES THE PROJECT MANAGE HEAT
ISLANDS?

DOES THE PROJECT PREPARE FOR
SHORT-TERM HAZARDS?

DOES THE PROJECT PREPARE FOR
LONG-TERM ADAPTABILITY?



CLIMATE AND RISK

1 EMISSIONS

CR1.1 Reduce Greenhouse Gas Emissions

CR1.2 Reduce Air Pollutant Emissions

2 RESILIENCE

CR2.1 Assess Climate Threat

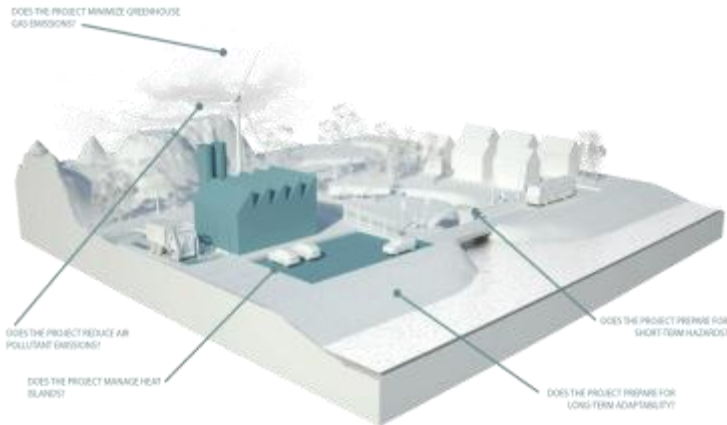
CR2.2 Avoid Traps and Vulnerabilities

CR2.3 Prepare For Long-Term Adaptability

CR2.4 Prepare for Short-Term Hazards

CR2.5 Manage Heat Island Effects

CR0.0 Innovate or Exceed Credit Requirements



ISI ENVISION 2.0 CREDITS

				Improved	Enhanced	Superior	Conserving	Restorative
QUALITY OF LIFE	PURPOSE	QL1.1	Improve Community Quality of Life	2	5	10	20	25
		QL1.2	Stimulate sustainable growth and development	1	2	5	13	16
		QL1.3	Develop local skills and capabilities	1	2	5	12	15
	WELLBEING	QL2.1	Enhance public health and safety	2			16	
		QL2.2	Minimize noise and vibration	1			8	11
		QL2.3	Minimize light pollution	1	2	4	8	11
		QL2.4	Improve community mobility and access	1	4	7	14	
		QL2.5	Encourage alternative modes of transportation	1	3	6	12	15
		QL2.6	Improve site accessibility, safety and wayfinding		3	6	12	15
	COMMUNITY	QL3.1	Preserve historic and cultural resources	1		7	13	16
		QL3.2	Preserve views and local character	1	3	6	11	14
		QL3.3	Enhance public space	1	3	6	11	13
		QL0.0	Innovate or exceed credit requirements (earn 1 through 8 pts)					
LEADERSHIP	COLLABORATION	LD1.1	Provide effective leadership and commitment	2	4	9	17	
		LD1.2	Establish a sustainability management system	1	4	7	14	
		LD1.3	Foster collaboration and teamwork	1	4	8	15	
		LD1.4	Provide for stakeholder involvement	1	5	9	14	
	MANAGEMENT	LD2.1	Pursue by-product synergy opportunities	1	3	6	12	15
		LD2.2	Improve infrastructure integration	1	3	7	13	16
	PLANNING	LD3.1	Plan for long-term monitoring and maintenance	1	3		10	
		LD3.2	Address conflicting regulations and policies	1	2	4	8	
		LD3.3	Extend useful life	1	3	6	12	
		LD0.0	Innovate or exceed credit requirements (earn 1 through 6 pts)					

RESOURCE ALLOCATION	MATERIALS	RA1.1	Reduce net embodied energy	2	6	12	18	
		RA1.2	Support sustainable procurement practices	2	3	6	9	
		RA1.3	Use recycled materials	2	5	11	14	
		RA1.4	Use regional materials	3	6	9	10	
		RA1.5	Divert waste from landfills	3	6	8	11	
		RA1.6	Reduce excavated materials taken off site	2	4	5	6	
		RA1.7	Provide for deconstruction and recycling	1	4	8	12	
	ENERGY	RA2.1	Reduce energy consumption	3	7	12	18	
		RA2.2	Use renewable energy	4	6	13	16	20
		RA2.3	Commission and monitor energy systems		3		11	
	WATER	RA3.1	Protect fresh water availability	2	4	9	17	21
		RA3.2	Reduce potable water consumption	4	9	13	17	21
		RA3.3	Monitor water systems	1	3	6	11	
		RA0.0	Innovate or exceed credit requirements (earn 1 through 9 pts)					
NATURAL WORLD	SITING	NW1.1	Preserve prime habitat			9	14	18
		NW1.2	Protect wetlands and surface water	1	4	9	14	18
		NW1.3	Preserve prime farmland			6	12	15
		NW1.4	Avoid adverse geology	1	2	3	5	
		NW1.5	Preserve floodplain functions	2	5	8	14	
		NW1.6	Avoid unsuitable development on steep slopes	1		4	6	
		NW1.7	Preserve greenfields	3	6	10	15	23
	LAND & WATER	NW2.1	Manage stormwater		4	9	17	21
		NW2.2	Reduce pesticide and fertilizer impacts	1	2	5	9	
		NW2.3	Prevent surface and groundwater contamination	1	4	9	14	18
	BIODIVERSITY	NW3.1	Preserve species biodiversity	2			13	16
		NW3.2	Control invasive species			5	9	11
		NW3.3	Restore disturbed soils				8	10
		NW3.4	Maintain wetland and surface water functions	3	6	9	15	19
		NW0.0	Innovate or exceed credit requirements (earn 1 through 8 pts)					
CLIMATE	EMISSIONS	CR1.1	Reduce greenhouse gas emissions	4	7	13	18	25
		CR1.2	Reduce air pollutant emissions	2	6		12	15
	RESILIENCE	CR2.1	Assess climate threat				15	
		CR2.2	Avoid traps and vulnerabilities	2	6	12	16	20
		CR2.3	Prepare for long-term adaptability				16	20
		CR2.4	Prepare for short-term hazards	3		10	17	21
		CR2.5	Manage heat island effects	1	2	4	6	
		CR0.0	Innovate or exceed credit requirements (earn 1 through 5 pts)					

Sample Credit

QL1.1 IMPROVE COMMUNITY QUALITY OF LIFE

INTENT:

Improve the net quality of life of all communities affected by the project and mitigate negative impacts to communities.

LEVELS OF ACHIEVEMENT

IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
<p>(2) Internal focus. The project team has located and reviewed the most recent and relevant community planning information. Some, but not systematic outreach to stakeholders and decision makers has taken place. Some relatively easy, but not particularly important or meaningful changes made to the project. No significant adverse community effects are caused by the project (A, B, C)</p>	<p>(5) Community linkages. More substantive efforts to locate, review, assess and incorporate the needs, goals and plans of the host community into the project. Most potential negative adverse impacts of the project on the host community are reduced or eliminated. Key stakeholders are involved the project decision-making process. (A, B, C)</p>	<p>(10) Broad community alignment. All relevant community plans are reviewed and verified through stakeholder input. The project team works to achieve good project alignment with community plans, recognizing that the scope of the project is a limiting factor. Potential negative impacts on nearby affected communities are reduced or eliminated. (A, B, C)</p>	<p>(20) Holistic assessment and collaboration. The project makes a net positive contribution to the quality of life of the host and nearby affected communities. The project team makes a holistic assessment of community needs, goals and plans, incorporating meaningful stakeholder input. Project meets or exceeds important identified community needs and long-term requirements for sustainability. Remaining adverse impacts are minimal, mostly accepted as reasonable tradeoffs for benefits achieved. The project has broad community endorsement. (A, B, C)</p>	<p>(25) Community renaissance. Through rehabilitation of important community assets, upgraded and extended access, increased safety, improved environmental quality and additional infrastructure capacity, the project substantially reinvigorates the host and nearby communities. Working in genuine collaboration with stakeholders and community decision-makers, the project owner and the project team scope the project in a way that elevates community awareness and pride. Overall quality of life in these communities is markedly elevated. (A, B, C, D)</p>

Sample Credit

20 POINTS

QUALITY OF LIFE



METRIC:

Measures taken to assess community needs and improve quality of life while minimizing negative impacts.

EVALUATION CRITERIA AND DOCUMENTATION

A. Has the project team identified and taken into account community needs, goals, plans and issues?

1. Lists and examples of documents obtained and reviewed, minutes of meetings with key stakeholders, community leaders and decision-makers, letters and memoranda.

B. Has the project team sought to align the project vision and goals to the needs and goals of the host and affected communities as well as address potential adverse impacts?

1. Comprehensive impact assessments conducted, identifying and evaluating the positive and negative impacts of the project on affected communities. Planned actions for mitigating adverse impacts.

2. Minutes of meetings, letters and memoranda with key stakeholders, community leaders and decision-makers for obtaining input and agreement regarding the impact assessment and planned actions.

C. To what extent has the affected communities been meaningfully engaged in the project design process?

1. Reports and documented results of meetings, design charrettes

and other activities conducted with representatives of affected communities.

2. Evidence of project processes for collecting, evaluating and incorporating community input into the project designs.

Demonstration of the thoroughness of the evaluation and incorporation into the designs.

3. Evidence showing the extent to which options were identified, and needed and reasonable changes to project were made in accordance with community needs, plans.

4. Acknowledgments and endorsements by the community that the design participation process was helpful and that their input was appropriately assessed and incorporated into the project design.

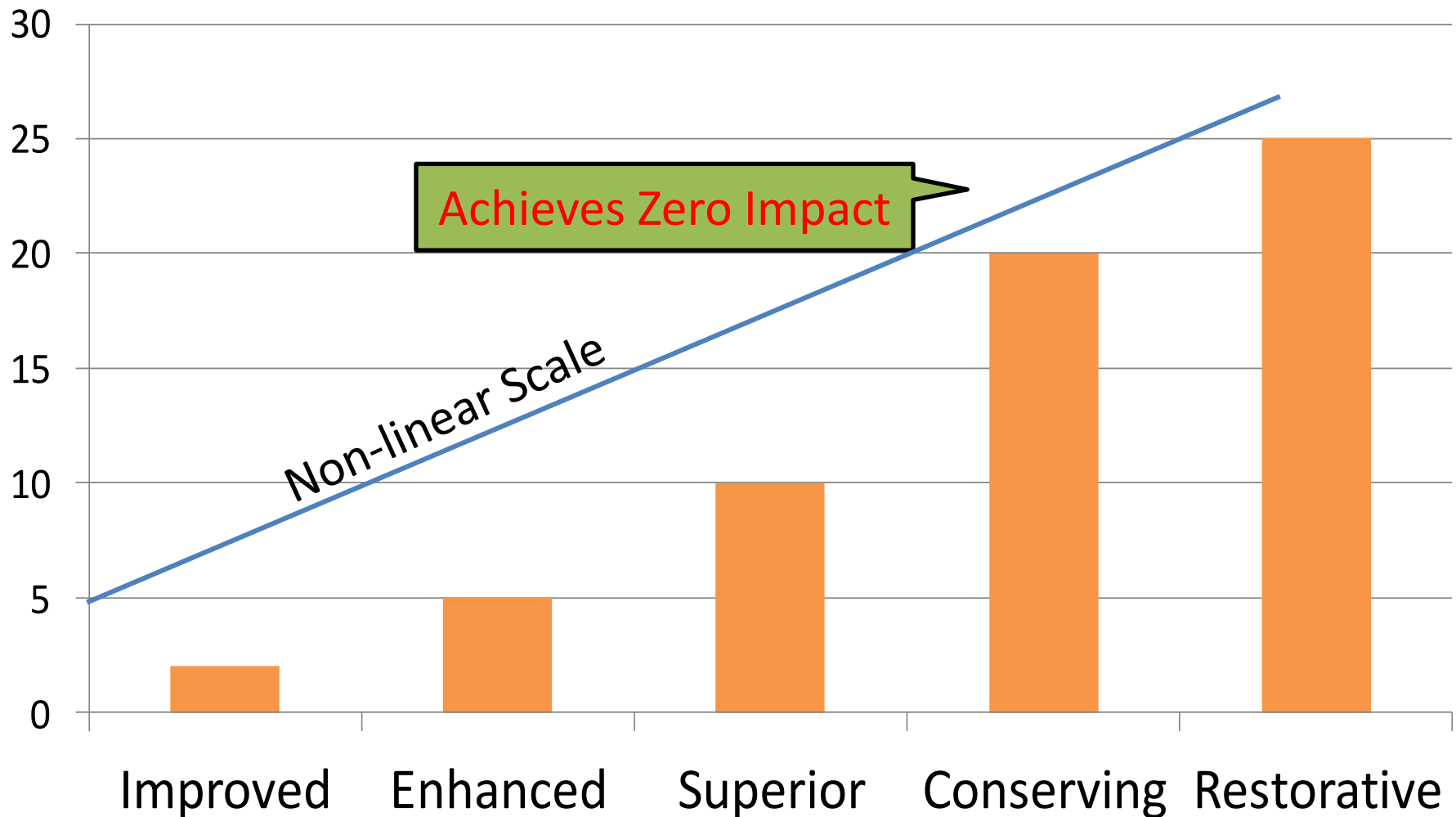
D. Has the project owner and the project team designed the project in a way that improves existing community conditions and rehabilitates infrastructure assets?

1. Plans, designs, meeting minutes with community stakeholders and decision-makers demonstrating an understanding of community conditions and assets, and substantive efforts to rehabilitate.





2. Evidence of community satisfaction and endorsement of plans.

Levels of Achievement

QL1.1 IMPROVE COMMUNITY QUALITY OF LIFE



Certification Award Levels

Recognition Level	Total Applicable Points (%)
Bronze Award	 20%
Silver Award	 30%
Gold Award	 40%
Platinum Award	 50%

Fee Schedule

Registration Fee: \$1000

Verification Fee

Project Size (\$)	Non-Member Price	ISI Member Price
Up to 2M	\$3,000	\$2,400
2-5M	\$8,500	\$7,000
5-25M	\$17,000	\$14,000
25-100M	\$25,000	\$21,000
100-250M	\$33,000	\$28,000
Over 250M	Contact ISI for large or multi-phase projects	

Appeals Fee: \$500 per credit

ENVISION

Project Examples



ALASKA FISH HATCHERY AWARDED THE FIRST ENVISION PROJECT CERTIFICATION IN JULY 2013

- » Alaska's new **William Jack Hernandez Sport Fish Hatchery** is a one-of-a-kind facility for the production of salmon and trout.
- » The project marks the largest ever application of intensive water recirculation technology by a public agency to dramatically reduce water and energy consumption.
- » The facility accommodates 100,000 visitors per year.



PROJECT FEATURES

SUSTAINABILITY

Sustainability guided the vision and development of every aspect of the hatchery. All facets of building and site design incorporated sustainability principles that will last far into the future. Sustainability considerations included:

- **Improving community quality of life**

- Economic and Social Benefits
 - Recreation
 - Jobs
 - Tax revenue
 - Income
 - Enhancing the environment
- Improved visitor safety and experience
 - Redesigned traffic flow and parking with crosswalks
 - Pathways around the building
 - ADA accessible viewing platforms and trails
- Public education integral in building design
 - Visitors' center with displays
 - Trails with interpretive kiosks
 - Outdoor viewing area where salmon rest below a dam

- **Preserving greenfields**

- Building on a reclaimed brownfield site benefits the environment and public by leaving the area cleaner than before development

- **Using recycled materials**

- Used recycled content building materials
- Reused existing staff housing, process water treatment, fish ladders and raceways

- **Reducing energy consumption significantly over traditional hatcheries**

- Recirculation technology greatly reduces heating and pumping costs
- Locating all hatchery operations within a single building provides tremendous opportunities for energy conservation
- Performance monitoring through a custom application maximizes control of energy and minimizes water use

- **Protecting freshwater availability**

- Storm and process water treatment prevents surface and ground water contamination, keeping Ship Creek clean
- Recirculation technology saves water and energy
- Anchorage's drinking water supply protected through:
 - Updating of the regional groundwater model to document no negative impacts from hatchery use
 - Minimizing groundwater needs through water reuse
 - Properly abandoning old, unneeded wells

ENVISION DOCUMENTATION

- 44% of total available points claimed by the team
- Earned **Envision GOLD** Award

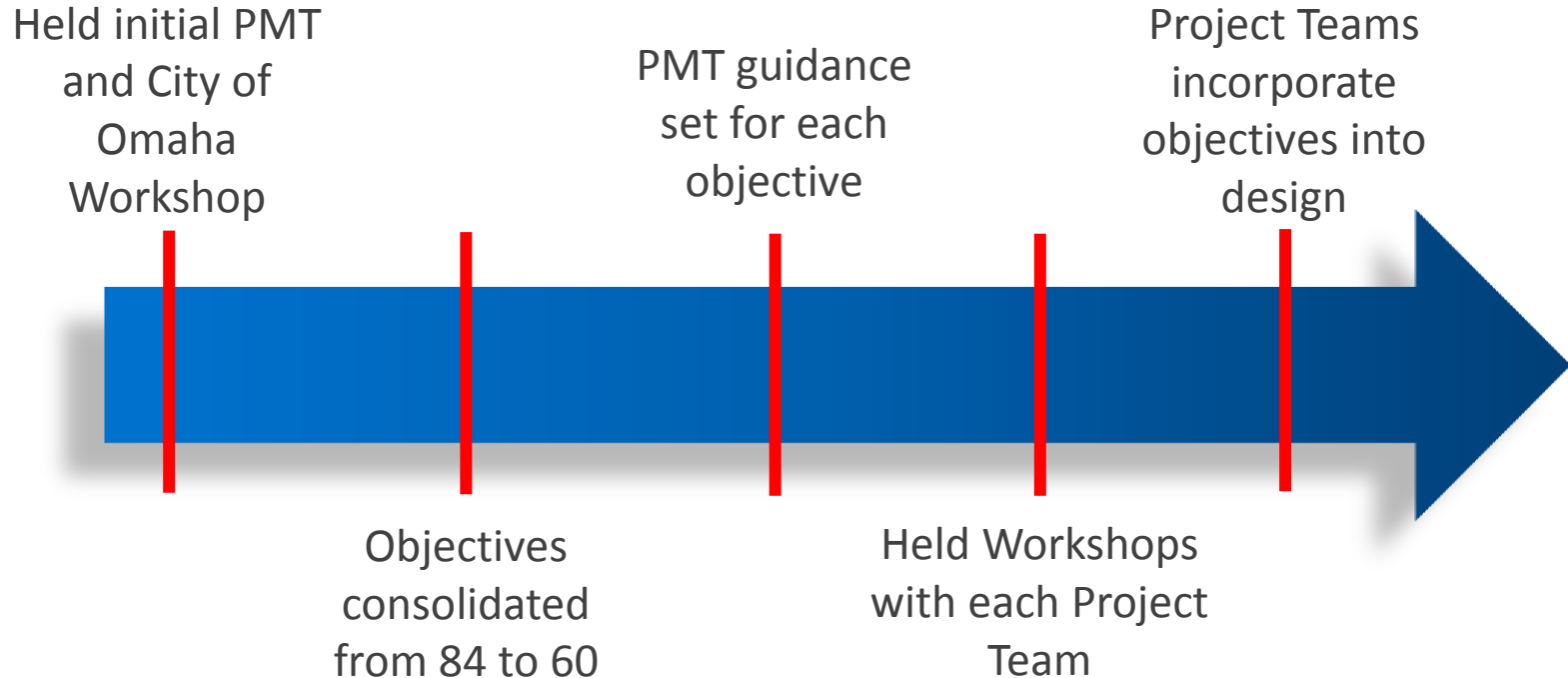
William Jack Hernandez Sport Fish Hatchery

Current Project Step: ASSESSMENT

Credit Category	Applicable Points	Points	Innovation Points	Total Points Pursued	Percentage of Available Points
QUALITY OF LIFE	155	77	0	77	50%
LEADERSHIP	97	62	6	68	64%
RESOURCE ALLOCATION	173	56	0	56	32%
NATURAL WORLD	182	103	0	103	57%
CLIMATE AND RISK	116	21	0	21	18%
Total Project Points	723	319	6	325	44%

Envision™ Scores

City of Omaha CSO Program



Employed the Envision Checklist

Example - Minne Lusa Stormwater Conveyance Sewer

ISI Credit	Potential Project Strategy	Potential ISI Level of Achievement
1.2.2 Avoid traps and vulnerabilities that create high, long-term risks	Use of tunneling construction method to eliminate conflicts with other existing utilities and virtually eliminate surface disruptions.	Superior
5.1.2 Design the project to fit with the local character	Consider tunnel drop shaft to be integrated with new bus facility.	Conserving
4.3.1 Select Grayfields for development	Tunnel drop shaft to be constructed at site of abandoned industrial facility (Gunderson Rail).	Restorative
8.1.3 Incorporate energy use reduction and conservation options in the design of the constructed works	Project reduces energy consumption by diverting flows from existing pumped detention cell to new detention cells operating by gravity.	Improving



Example - Paxton Blvd Stormwater Conveyance Sewer

ISI Credit	Potential Project Strategy	Potential ISI Level of Achievement
3.3.1 Provide for public and stakeholder involvement in project decision-making	Extensive coordination with Fontenelle Park stakeholders, including City of Omaha Parks Department. Stormwater infrastructure in park will be coordinated with planned enhancements to park that will include trails, park roads, prairie landscape, interpretive educational exhibits, signage and public open space.	Superior
5.1.2 Design the project to fit with the local character	Retain and/or re-construct historic streetscape elements of Paxton Boulevard, another of Omaha's original boulevards.	Conserving
7.4.2 Manage stormwater on site	Project design includes evaluation of green solutions throughout watershed as well as in Fontenelle Park.	Enhanced



Example - JCB Stormwater Conveyance Sewer

ISI Credit	Potential Project Strategy	Potential ISI Level of Achievement
2.2.1 Pursue opportunities for sustainability improvement throughout the full project life cycle	Evaluation of watershed hydrology with respect to maintaining water level in Adams Park for recreational benefit with goal of avoiding pumping of supplemental water source	Superior
4.1.2 Preserve and restore wetlands	Enhancement of Adams Park detention basin to include additional wetlands and wetlands forebay.	Restorative
7.4.2 Manage storm water on-site	Project design includes evaluation of green infrastructure solutions throughout watershed as well as in Adams Park.	Enhanced



WEBSITE

<http://www.sustainableinfrastructure.org/>

The screenshot shows the homepage of the Institute for Sustainable Infrastructure (ISI). At the top left is the ISI logo, which consists of a green square with a white leaf-like shape and the letters 'I S I' below it. To the right of the logo is the text 'INSTITUTE FOR SUSTAINABLE INFRASTRUCTURE'. A navigation bar at the top right contains links: Home, About Us, Join ISI, Contact Us, Search, and a green Login button. Below the navigation bar is a search box with the text 'search' and a magnifying glass icon. A dark brown horizontal bar contains links: News, FAQs, Rating System, ISI Credentials, Project Application, Education & Training, Case Studies, and Comments. The main banner features a close-up image of a water faucet with a single drop of water falling. Overlaid on this image is the text 'Building Tomorrow's Infrastructure Today'. Below the banner are three main content areas. The left area is titled 'ISI Sustainable Infrastructure Rating System' and features 'Envision™ 2.0 is Now Available.' with two buttons: 'Learn more about Envision™ 2.0' and 'Login to Download or Comment'. The middle area is titled 'ISI Blog' and features a photo of a bridge with the text 'Visit the ISI Blog to find out how we are "Building 2050 Today".' The right area is titled 'ISI Credential Application' and features the text 'Register here for the ISI Credential and Training Program. You must be registered and your application accepted to participate.' At the bottom, there is a 'Latest News' section with a link 'What Would You Like to Do Today?' and a link 'Accepted Applicants'.

Home About Us Join ISI Contact Us Search Login

INSTITUTE FOR SUSTAINABLE INFRASTRUCTURE

search

News FAQs Rating System ISI Credentials Project Application Education & Training Case Studies Comments

Building Tomorrow's Infrastructure Today

ISI Sustainable Infrastructure Rating System

Envision™ 2.0 is Now Available.

Learn more about Envision™ 2.0 Login to Download or Comment

ISI Blog

Visit the ISI Blog to find out how we are "Building 2050 Today".

ISI Credential Application

Register here for the ISI Credential and Training Program. You must be registered and your application accepted to participate.

What Would You Like to Do Today? Latest News Accepted Applicants

FOR MORE
INFORMATION
ABOUT **ENVISION™**

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